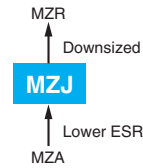


# Alchip™-MZJ Series

- Lower ESR, 2,000 to 5,000 hours at 105°C
- Rated voltage range : 6.3 to 50V
- Nominal capacitance range : 22 to 10,000μF
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- Vibration resistant structure
- RoHS2 Compliant
- AEC-Q200 compliant : Please contact Chemi-Con for more details, test data, information.



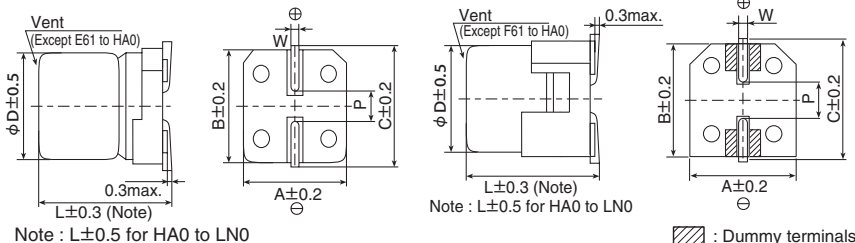
## SPECIFICATIONS

Items	Characteristics							
<b>Category</b>	-55 to +105°C							
<b>Temperature Range</b>	-55 to +105°C							
<b>Rated Voltage Range</b>	6.3 to 50V <sub>dc</sub>							
<b>Capacitance Tolerance</b>	±20% (M) (at 20°C, 120Hz)							
<b>Leakage Current</b>	I=0.01CV or 3μA, whichever is greater. (at 20°C after 2 minutes) Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)							
<b>Dissipation Factor (tan δ)</b>	Rated voltage (V <sub>dc</sub> )	6.3V	10V	16V	25V	35V	50V	(at 20°C, 120Hz)
	tan δ (Max.)	0.26	0.19	0.16	0.14	0.12	0.12	
	When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.							
<b>Low Temperature Characteristics (Max. Impedance Ratio)</b>	Rated voltage (V <sub>dc</sub> )	6.3V	10V	16V	25V	35V	50V	(at 120Hz)
	Z(-25°C)/Z(+20°C)	2	2	2	2	2	2	
	Z(-40°C)/Z(+20°C)	3	3	3	3	3	3	
	Z(-55°C)/Z(+20°C)	4	4	4	3	3	3	
<b>Endurance</b>	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for specified time at 105°C.							
	Time	E61 to JA0 : 2,000 hours KE0 to LN0 : 5,000 hours						
	Capacitance change	≤ ±30% of the initial value						
	D.F. (tan δ)	≤200% of the initial specified value						
	Leakage current	≤The initial specified value						
<b>Shelf Life</b>	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.							
	Capacitance change	≤ ±30% of the initial value						
	D.F. (tan δ)	≤200% of the initial specified value						
	Leakage current	≤The initial specified value						
<b>Surge Voltage Test</b>	The capacitors shall be subjected to 1,000 cycles each consisting of charging with the specified surge voltage for 30±5 seconds through a protective resistor (as required for RC=0.1±0.05sec) and open-circuiting for 5.5 minutes at a room temperature of 15 to 35°C.							
	Rated voltage (V <sub>dc</sub> )	6.3	10	16	25	35	50	
	Surge voltage (V <sub>dc</sub> )	7.2	12	18	29	40	58	
	Appearance	No significant damage						
	Capacitance change	≤ ±20% of the initial value						
	D.F. (tan δ)	≤200% of the initial specified value						
	Leakage current	≤The initial specified value						
	(Caution)	Surge Voltage Test intends to evaluate capacitors in durability of an exceptional excessive voltage under specific conditions. It does not imply long-term use at all.						

## DIMENSIONS [mm]

- Terminal Code : A
- Terminal Code : G (Vibration resistant structure)

- Size code : E61 to LN0
- Size code : F61 to LN0



Size code	φD	L	A	B	C	W	P
E61	5	5.8	5.3	5.3	5.9	0.5 to 0.8	1.4
F61	6.3	5.8	6.6	6.6	7.2	0.5 to 0.8	1.9
F80	6.3	7.7	6.6	6.6	7.2	0.5 to 0.8	1.9
HA0	8	10.0	8.3	8.3	9.0	0.7 to 1.1	3.1
JA0	10	10.0	10.3	10.3	11.0	0.7 to 1.1	4.5
KE0	12.5	13.5	13.0	13.0	13.7	1.0 to 1.3	4.2
KG5	12.5	16.0	13.0	13.0	13.7	1.0 to 1.3	4.2
LH0	16	16.5	17.0	17.0	18.0	1.0 to 1.3	6.5
LN0	16	21.5	17.0	17.0	18.0	1.0 to 1.3	6.5

## MARKING

EX) 35V220μF

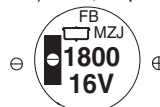


- Rated voltage symbol (E61 to JA0)

Rated voltage (V <sub>dc</sub> )	6.3	10	16	25	35
Symbol	j	A	C	E	V

KE0 to LN0

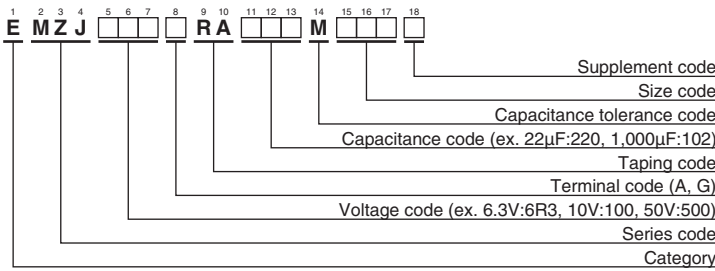
EX) 16V1,800μF



Applying voltage over the rated voltages causes the capacitors to have short lifetime. Besides, applying voltage over the specified surge voltages may cause to have short circuit failure. A protection circuit should be used if applied voltage will exceed the rated voltages.

Alchip™-MZJ Series

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (surface mount type)"

◆STANDARD RATINGS

WV (V <sub>dc</sub> )	Cap (μF)	Size code	ESR (Ω max./20°C, 100kHz)	Rated ripple current (mA <sub>rms</sub> /105°C, 100kHz)	Part No.	WV (V <sub>dc</sub> )	Cap (μF)	Size code	ESR (Ω max./20°C, 100kHz)	Rated ripple current (mA <sub>rms</sub> /105°C, 100kHz)	Part No.
6.3	100	E61	0.36	240	EMZJ6R3ARA101ME61G	25	33	E61	0.36	240	EMZJ250ARA330ME61G
	220	F61	0.26	300	EMZJ6R3□RA221MF61G		33	F61	0.26	300	EMZJ250□RA330MF61G
	330	F80	0.16	600	EMZJ6R3□RA331MF80G		47	F61	0.26	300	EMZJ250□RA470MF61G
	1,000	HA0	0.08	850	EMZJ6R3□RA102MHA0G		68	F61	0.26	300	EMZJ250□RA680MF61G
	1,500	JA0	0.06	1,190	EMZJ6R3□RA152MJA0G		100	F80	0.16	600	EMZJ250□RA101MF80G
	1,800	JA0	0.06	1,190	EMZJ6R3□RA182MJA0G		330	HA0	0.08	850	EMZJ250□RA331MHA0G
	3,300	KE0	0.051	1,210	EMZJ6R3□RA332MKE0S		470	JA0	0.06	1,190	EMZJ250□RA471MJA0G
	3,900	KG5	0.044	1,420	EMZJ6R3□RA392MKG5S		560	JA0	0.06	1,190	EMZJ250□RA561MJA0G
	6,800	LH0	0.035	1,850	EMZJ6R3□RA682MLH0S		1,200	KE0	0.051	1,210	EMZJ250□RA122MKE0S
	10,000	LN0	0.026	2,330	EMZJ6R3□RA103MLN0S		1,500	KG5	0.044	1,420	EMZJ250□RA152MKG5S
10	150	F61	0.26	300	EMZJ100□RA151MF61G	35	22	E61	0.36	240	EMZJ350ARA220ME61G
	680	HA0	0.08	850	EMZJ100□RA681MHA0G		33	F61	0.26	300	EMZJ350□RA330MF61G
	1,000	JA0	0.06	1,190	EMZJ100□RA102MJA0G		47	F61	0.26	300	EMZJ350□RA470MF61G
	1,200	JA0	0.06	1,190	EMZJ100□RA122MJA0G		68	F61	0.26	300	EMZJ350□RA680MF61G
	2,200	KE0	0.051	1,210	EMZJ100□RA222MKE0S		100	F80	0.16	600	EMZJ350□RA101MF80G
	2,700	KG5	0.044	1,420	EMZJ100□RA272MKG5S		100	HA0	0.08	850	EMZJ350□RA101MHA0G
	4,700	LH0	0.035	1,850	EMZJ100□RA472MLH0S		150	HA0	0.08	850	EMZJ350□RA151MHA0G
6,800	LN0	0.026	2,330	EMZJ100□RA682MLN0S	220	HA0	0.08	850	EMZJ350□RA221MHA0G		
16	47	E61	0.36	240	EMZJ160ARA470ME61G	50	390	JA0	0.06	1,190	EMZJ500□RA391MKE0S
	100	F61	0.26	300	EMZJ160□RA101MF61G		470	KG5	0.092	1,120	EMZJ500□RA471MKG5S
	150	F80	0.16	600	EMZJ160□RA151MF80G		1,000	LH0	0.073	1,660	EMZJ500□RA102MLH0S
	220	F80	0.16	600	EMZJ160□RA221MF80G		1,200	LN0	0.050	1,920	EMZJ500□RA122MLN0S
	470	HA0	0.08	850	EMZJ160□RA471MHA0G						
	680	JA0	0.06	1,190	EMZJ160□RA681MJA0G						
	820	JA0	0.06	1,190	EMZJ160□RA821MJA0G						
	1,800	KE0	0.051	1,210	EMZJ160□RA182MKE0S						
	2,200	KG5	0.044	1,420	EMZJ160□RA222MKG5S						
	3,900	LH0	0.035	1,850	EMZJ160□RA392MLH0S						
5,600	LN0	0.026	2,330	EMZJ160□RA562MLN0S							
25	22	E61	0.36	240	EMZJ250ARA220ME61G						

□ : Enter the appropriate terminal code.

◆RATED RIPPLE CURRENT MULTIPLIERS

● Frequency Multipliers

Size code	Capacitance(μF)	Frequency(Hz)			
		120	1k	10k	100k
E61 to JA0	22 to 150	0.40	0.75	0.90	1.00
	220 to 560	0.50	0.85	0.94	1.00
	680 to 1,800	0.60	0.87	0.95	1.00
KE0 to LN0	390 to 470	0.50	0.85	0.94	1.00
	680 to 1,800	0.60	0.87	0.95	1.00
	2,200 to 3,300	0.75	0.90	0.95	1.00
	3,900 to 10,000	0.85	0.95	0.98	1.00

The deterioration of aluminum electrolytic capacitors accelerates their life due to the internal heating produced by ripple current. For details, refer to Section "5-3 Ripple Current Effect on Lifetime" in the catalog, Technical Note.



- Always read "Notes on Use" before using the product in order to enable you to use the product correctly and prevent any faults and accidents from occurring.
- Request the Product Specification on the product of NIPPON CHEMI-CON CORPORATION to refer to it as well as this brochure prior to the order of the products. Some specific notes on use of the ordered product may be described in the specifications.
- The products listed in this catalog are designed and manufactured for general electronics equipment use and are not intended for use in applications that can adversely affect human life; where the malfunction of equipment may cause damage to life or property. In addition, our products are not intended to be used in specific applications that may cause a major social impact. Please consult with us in advance of usage of our products in the following listed applications. ① Aerospace equipment ② Power generation equipment such as thermal power, nuclear power etc. ③ Medical equipment ④ Transport equipment (automobiles, trains, ships, etc.) ⑤ Transportation control equipment ⑥ Disaster prevention / crime prevention equipment ⑦ Highly publicized information processing equipment ⑧ Submarine equipment ⑨ Other applications that are not considered general-purpose applications.
- The circuits described as examples in this catalog and the "delivery specifications" are featured in order to show the operations and usage of our products, however, this fact does not guarantee that the circuits are available to function in your equipment systems. We are not in any case responsible for any failures or damage caused by the use of information contained herein. You should examine our products, of which the characteristics are described in the "delivery specifications" and other documents, and determine whether or not our products suit your requirements according to the specifications of your equipment systems. Therefore, you bear final responsibility regarding the use of our products.  
Please make sure that you take appropriate safety measures such as use of redundant design and malfunction prevention measures in order to prevent fatal accidents and/or fires in the event any of our products malfunction.
- We strongly recommend our customers to purchase Nippon Chemi-Con products only through our official sales channels. We assume no responsibility for any defects or damages caused by using products purchased from outside our official sales channel or of counterfeit goods. In addition, we will ask the customer to pay the investigation cost for products purchased outside our official sales channel.
- We reserve the right to discontinue production and delivery of products. We do not guarantee that all the products included in this catalog will be available in the future.  
The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products
- We continually strive to improve the quality and reliability of our products, but in any case that our product does not meet our published specifications, please stop using it promptly and contact us immediately. As for compensation for non-conforming goods delivered by Chemi-Con, we will limit it only to goods found in non-compliance of our published specifications. This may be accomplished by a no cost replacement of non-conforming individual products, a credit of the piece price paid per each individual non-conforming product, or in other ways deemed necessary.  
In addition, we have an established system with enhanced traceability, therefore we will limit the applicable lot items for any potential compensation.

[Part Numbering System](#)

[Part Numbering System \(Appendix\)](#)

[Standardization](#)

[Available Items by Manufacturing Locations](#)

[Environmental Measures](#)

[Technical Note](#)

[Precautions and Guidelines](#)

[Recommended Soldering Conditions](#)

[Taping, Lead-preforming and Packaging](#)

[Available Terminals for Snap-in and Screw Mount Type](#)